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FIELD OBSERVATIONS ON THE ROSE-BREASTED GROSBEAK.

BY IRA N. GABRIELSON..

Twice in the spring of 1914, we located a nest of the Rose-breasted Grosbeak (*Zamelodia ludoviciana*) with the purpose of studying the nesting habits; but each time we were disappointed, owing to the persistent activities of small boy egg collectors. For this reason we were delighted to find a nest conveniently located, which had escaped their notice, and safely hatched. This nest, which was discovered on June 25, contained two young about four or five days old. It was located about six feet from the ground in a small elm and was the usual flimsy affair. The blind was erected immediately. When we entered, we found the nest to be so high that we could not see into it. But cutting out a small section of the trunk and binding the top of the tree firmly to the stump left for that purpose, the nest was lowered to within three feet of the ground. It was otherwise left undisturbed, save for the cutting away of such small twigs as interfered with the view.

The blind was entered for observation work on June 26 at 5:20 a. m. From then until the morning of July 2, my wife and I alternated in the blind for as much time each day as possible. Raymond Jarvis spent part of one day in the blind and we were grateful to him for the relief. The first

table will show the amount of time spend in the blind each day and also the time spent by the grosbeaks in brooding.

TABLE I.

Date.	Time in blind.	Brooding.
June 26—5:20 A. M.-4:20 P. M.	11 hrs.	1 hr. 53 min.
June 27—7:15 A. M.-4:30 P. M.	9 hrs. 15 min.	3 hrs. 16 min.
June 28—5:15 A. M.-7:00 P. M.	13 hrs. 45 min.	6 hrs. 54 min.
June 29—9:00 A. M.-4:45 P. M.	7 hrs. 45 min.	1 hr. 49 min.
June 30—9:40 A. M.-4:20 P. M.	6 hrs. 40 min.	38 min.
July 1—5:45 A. M.-4:40 P. M.	10 hrs. 55 min.	1 hr. 19 min.
	59 hrs. 20 min.	15 hrs. 49 min.

The brooding time from the twenty-sixth to the twenty-ninth was distributed throughout the day in periods averaging about nine minutes each. During these days, with one exception, the brooding position was practically unchanged. The weather was moderate and we could remain in the blind without discomfort. This position (Fig. 1) was assumed to be as a protection from the cold. Once, on June 26, the female brooded through a rain storm. Her position was nearly the same as the one illustrated, the only noticeable difference being a more pronounced settling into the nest.

On June 29, during the heat of the day a change was noticed. The nestlings were restless and continually crowded from under her. She commenced at this time to stand in the bottom of the nest and spread her wings slightly. Fig. 2 illustrates this shading instinct at its highest development in this individual. It is very imperfect when compared with some birds of other species, although better than the average individual which has come to my notice. On some occasions the wings were slightly spread and the feathers of the head and back were perceptibly elevated, while at other times a barely noticeable spreading of the wings testified to an attempt to furnish the shade which the young needed. On the last two days the covering of the young by this method constituted the entire brooding practice. Only seven periods were recorded on these two days and they averaged almost 17 minutes each. As soon as the surrounding vegetation

shaded the nest the brooding ceased. The male took no part in the work, and only once or twice did he show any evidence of possessing this instinct. On these occasions he straddled the nest awkwardly with his body drawn into a bunch. His position afforded no protection to the nestlings and was never maintained long enough to be accurately timed.

METHOD OF FEEDING.

It has been stated that the Black-headed Grosbeak (*Zamelodia melanocephala*) feeds its young by regurgitation * and

Rose-breasted Grosbeak.
Fig. I.—♀ Brooding.

one would naturally expect that *ludoviciana* would do the same. We watched these birds carefully from a distance of three to five feet for a period of nearly sixty hours and did not see a single feeding that was clearly regurgitative.

Both the male and female took part in the feeding of the nestlings and their actions were exactly alike. On account of the large size of the beak the feeding act differed somewhat from that observed in other passerine birds. In other

* Food Habits of the Grosbeaks. McAtee. Bul. 32. Biological Survey. Pp. 75.

forms with which I am acquainted, the food is thrust into the nestling throat by the parent. With the grosbeaks this did not seem to be possible and the following method was used much of the time. In order to convey to the reader the picture of this process it will be necessary to explain that in the Grosbeak's bill the cutting edges of the mandibles (especially the upper one) are slightly turned inward toward the median line so that when the mandibles are brought together a shallow longitudinal depression is formed. The beak of the parent was brought into the nestling mouth in such a manner that the tip of its (the nestling's) mandibles are in this depression. When this was accomplished the parent began a slight movement of the mandibles as if chewing. The effect of this was to allow the morsel to slip down into the nestling mouth. As the nestlings became older this action was hastened by their action of closing the mandibles over the ends of the food projecting on each side of the beak. At times the morsel was carried into the mouth of the young bird in such a position as to lodge there. When this occurred the parent seized it, placed it crosswise of his or her beak and the entire process was repeated. Out of the 459 observed feedings 274 were of this nature. That is the food was projecting from the beak as they approached the nest, which was certain indication that regurgitation was not being practiced on these visits. The above process was almost invariably carried out even if it required considerable maneuvering on the part of the parents.

With these 274 feedings disposed of there remain 185 feedings, during which regurgitation might have been practiced. At first sight some of these feedings seemed to be of a regurgitative nature, but continued observation convinced us that nothing of the kind occurred during our study of this pair. During the first seven feedings nothing was visible in the parent's beak and this might have been taken as regurgitative feeding but for a chance observation. The nest was located in a small elm in the midst of a willow thicket and, on these willows the fruiting aments were not quite ripe.

They hung all around the nest, and while waiting for the parents to recover from their fright and commence feeding the nestlings, I noticed that they began feeding on these seeds. They seized an ament in their beaks and by a rapid motion of the mandibles shelled off the outer scales and cotton, retaining the seeds in their mouth. Suddenly the female, who had been gradually coming nearer the nest, shelled some of

Rose-breasted Grosbeak.
Fig. II.—♀ Shading the Young.

the seeds, hopped to the nest and fed one of the nestlings. This instantly raised the question, was that nestling fed by regurgitation? A close watch was kept for a repetition of the performance to see if any action of swallowing could be detected or any throat action, such as one might expect in regurgitative feeding, be noted. During the observations willow seeds were brought in this way eleven times and the seeds of an anemone (*Anemone canadensis*) once. We actually saw them pick these seeds and bring them to the nest. When they were feeding we many times saw them pick the seeds and swallow them and were close enough to readily detect this motion. The significant thing was that we could not de-

tect any swallowing action when the seeds were carried to the nest, nor could we detect any muscular acting of the throat, which would indicate regurgitation.

The second item in the food table is seeds which are recorded fifty-three times. This represents the number of feedings in which we were positive seeds were fed, but when the grosbeaks were not seen to gather them. They were secured out of sight of the blind and brought to the nest, where they were shelled and fed to the nestlings. Those recorded under the term unidentified were presumably largely seeds, but as we neither saw them garnered nor shelled we could not be positive. The significant thing about these feedings was this: no food was visible in the beak, and yet at a distance of three feet we could detect no regurgitative action of the muscles, but, on the contrary, we noted that the beak moved exactly as in the feeding of insect food. As we were close enough to see the parents swallow the lice and other small objects picked from the nest, it would seem that any regurgitative action could have been detected.*

It is possible that the grosbeaks feed by this method in the first day or two of the nestling period and it is also possible that such action as is described above would be called regurgitation by some writers. It does not seem proper to me, however, to call actions such as the carrying of berries in the throats by waxwings regurgitative, or to class them with the performance of a bittern or heron in feeding its young. In the case of the grosbeaks as we observed them there was even less reason for placing them in such a class.

Briefly, the facts on which we base our belief that the nestlings were not fed by regurgitation on the 185 feeding visits, when no food was visible in the beak, are these:—

* In so small a bird as the Ruby-throated Hummingbird (*Archilochus colubris*) Bradford Torry has described the regurgitative feeding as a "frightful looking act" (Chapman's Handbook of Birds. Pp. 242). This description certainly applies to all the birds which we have noted in this act, and it would seem that in the case of the grosbeak there would at least be action enough to be detected at so short a distance.

A. On 12 of these visits (11 with willow seeds and 1 with anemome) they were seen to pick the seeds, bring them to the nest and feed the nestlings without swallowing them.

B. On 53 visits they came to the nest with seeds in their mouths, shelled them and fed them to the nestlings.

C. On 120 visits the food was not visible at any time; but every feeding action was the same as on other visits.

D. At no time during the 459 feedings did we detect the slightest muscular action, such as might be expected in regurgitation.

Rose-breasted Grosbeak.
Fig. III.—♀ Inspecting the Nest.

One of the most interesting features of this method of feeding was the ease and dexterity with which the grosbeaks used their clumsy looking beaks in extracting the meats from the seeds. Although we watched them many times, we could not determine exactly how it was accomplished. The notch in the beak and the tongue played the important part in the work, which was carried on with such rapidity that a miniature shower of discarded material fell to the ground as they worked over a beak full of seeds.

TABLE II *

FOOD	June 26	June 27	June 28	June 29	June 30	July 1	Variety of Nestling Food: Food of A: June 26	June 27	June 28	June 29	June 30	July 1	Total for A	Food of B: June 26	June 27	June 28	June 29	June 30	July 1	Total for B	Nestling fed not determ'd	Totals
Willow Seeds	5	1	...	3	2	...	4	1	...	3	1	...	9	1	...	...	2	...	...	3	1	11
Seeds	...	...	...	...	14	39	...	...	...	...	9	29	38	...	...	...	...	11	26	37	1	53
Anemone Seeds	...	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	1	...	1	...	1
Mulberries	...	...	...	2	...	3	...	...	...	...	...	2	2	...	...	...	2	...	1	3	...	5
Measuring Worms	8	16	4	9	2	6	7	11	3	1	2	3	27	1	5	1	8	...	3	18	...	45
Hairy Caterpillars	...	...	...	...	2	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...	...	2
Wireworms	2	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	1	...	2
Larvae	8	10	73	17	2	8	5	5	35	8	1	6	60	2	5	38	9	1	2	57	1	118
Large Larvae	3	12	7	7	13	...	3	8	4	3	5	...	23	...	4	3	4	8	...	19	...	42
Cabbage Butterfly	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1
Moths	...	...	11	2	...	...	...	...	6	...	...	...	6	...	...	5	2	...	...	7	...	13
Flies	4	...	...	...	...	2	2	...	...	...	...	1	3	2	...	...	...	...	1	3	...	6
May Flies	...	...	...	2	...	...	...	...	...	1	...	...	1	...	...	...	1	...	...	1	...	2
Crickets	...	...	...	5	...	...	...	...	...	1	...	...	1	...	...	...	4	...	...	4	...	5
Lady Beetles	...	...	...	2	6	...	...	...	...	1	5	...	6	...	...	...	1	1	...	2	...	8
Potato Beetles	...	...	...	...	...	4	...	...	...	...	...	2	2	...	...	...	...	...	2	2	...	4
Grasshoppers	...	...	...	...	...	10	...	...	...	...	...	6	6	...	...	...	...	...	4	4	...	10
Spiders	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	1	2	3	...	3
Animal Matter	...	...	2	1	...	...	...	...	..1	1	...	...	2	...	...	1	...	...	...	1	...	3
Unidentified	23	20	13	24	24	16	17	16	10	14	15	10	82	7	10	9	12	17	9	64	3	120
Beetles	1	1	1	...	2	...	1	...	1	...	1	...	3	...	1	...	...	1	...	2	...	5
Totals	54	61	111	74	69	90	40	42	33	60	42	59	276	14	25	57	45	41	50	232	6	459

* A few explanations of this table may be in order. The totals for the first six columns are given in the last column to the right. Reading from left to right the number of any item for A plus the number of that item for B is equal to the total in the right hand column except in the following instance: The total of the items, seeds, willow seeds, anemone seeds, and unidentified, represents the number of visits to the nest with that food material, and as both nestlings were often fed on each visit the total feedings for both exceeds the number of visits. Under the term animal matter is included feedings which were recognized as animal rather than vegetable, but not otherwise identified.

FEEDING.

The bulk of the determined insect food was largely divided into two groups, larvæ, and large larvæ. The terms are self-explanatory. Among the latter were several resembling tomato worms and, once or twice, we thought we could recognize partly grown cecropia larvæ. Among the former we occasionally recognized an army worm when it had to be withdrawn from the nestling mouth, but for the most part

Rose-breasted Grosbeak.
Fig. IV.—♂ Approaching with Food.

they were either too badly macerated or too well concealed in the beak of the parent to be identified. Geometrid larvæ were dangling from the twigs in abundance and probably many entered simply as larvæ belonged here. They were entered as measuring worms only when the parents were actually observed to secure them. Most birds, when they bring worms or larvæ, carry them crosswise in the tip of the beak and consequently almost the entire length is visible to the observer, but the present species carried them far back in the beak in such a manner as to render only the ends visible.

The three larval items total 205 out of the 459 feedings or 44.66% of the counted total; seeds (first three items in the table) were fed 65 times or 14.11%; unidentified forms 120 times or 26.14%; and a variety of insect forms 15.09%. Computing it in another way; vegetable food, including the mulberries, was 15.25%; insect food 58.61%; and unknown 26.14%. Only four potato bugs were fed and few grasshoppers, although the latter were abundant.

The grosbeaks confined their foraging to the small timber belt described in the Red-winged Blackbird paper.* The Red-

* The Red-winged Blackbird. Ira N. Gabrielson. Wilson Bulletin, June, 1915.

wing nest was not twenty feet away, but the parents never came into the timber. We had here two birds nesting on the line between two regions of plant growth, but each confining themselves to distinct areas. A circle drawn about a point between the two nests would have enclosed an area which would have been almost equally divided between the two species, as a hunting ground.

The distribution of the food to the nestlings was as nearly equal as could be expected, although A, the larger, received a greater part than B. It was a clear case of his overreaching B and getting more than his share, but the feedings came so often that B still received sufficient food. The table shows the daily distribution of food to the two nestlings and also the total received by each. Both the male and female took part in the feeding, but the latter was much more active, 283 visits out of 382 being credited to her.

SANITATION.

Table III. Disposition of the Excreta.

Date.	C. away	Dev.	C. away	Dev.	C. away	Dev.	Exc.
June 26	0	4	3	3	3	8	11
June 27	5	9	0	8	5	17	22
June 28	9	5	7	3	16	8	24
June 29	8	1	5	2	13	3	16
June 30	2	0	7	3	9	3	12
July 1	2	0	5	0	7	0	7
Totals	26	19	27	20	53	39	92

Table III shows the disposition of the excreta and also the number of times it was taken by each parent. This work was more equally distributed than that of feeding. In the early part of the study the sacs were largely devoured by the parents, but after the twenty-seventh the number so disposed of exhibited a tendency to decrease, and on the last day all were carried away.

MISCELLANEOUS.

The male was more devoted to his family than is usual in the individuals of his sex with which we have become acquainted. One of the parents was always at or near the nest and the male especially spent much time perched in a willow watching it. If neither were to be seen at the nest a glance around invariably revealed him on guard eight or ten feet

Rose-breasted Grosbeak.
Fig. V.—♀ Feeding.

above it. The female when on guard duty sat on the edge of the nest, but the male preferred the more distant perch.

The male spent much time in an effort to drive the male Red-wing away from his chosen perch on the other side of

the same tree and, while he generally succeeded in driving him off, the blackbird was usually back to his perch by the time the Grosbeak was settled comfortably at his nest. Once they united forces against a Bronzed Grackle and drove him away.

Only two visitors appeared directly at the nest: a Crested Flycatcher, to which they paid no attention; and a male Baltimore Oriole, which was quickly driven away by the female.

Rose-breasted Grosbeak.
Fig. VI.—♂ Feeding.

BIRDS BY THE WAYSIDE,

IN EGYPT AND NUBIA.

BY ALTHEA R. SHERMAN.

The traveler of today in Egypt is but one of its tens of thousands of annual visitors, who form a procession that can be traced back to Herodotus in the dim light of twenty-three hundred years ago. Full many of this visiting host have furnished to the world most accurate descriptions and pictorial representations, whereby the minds of all may be well-stored with mental conceptions of what they are to see in a land slow to undergo changes. Probably in recent years the changes are coming more rapidly, where the waters of the Nile have been held back, where archæologists are uncovering treasures long hidden in the sands, and where some forms of life are apparently vanishing. Such disappearance seems to me to be the case of the Buffed-backed Heron (*Ardeola russata*). Expecting to see the species in large numbers: flocks of them following the plow or industriously picking flies from the cattle in the fields, I saw barely three individuals on three widely separated sand-bars in the Nile, notwithstanding that for them a keen lookout was kept daily. Charles Whymper in his "Egyptian Birds," published in 1909, writes that this Heron is decreasing in numbers, having found it abundant in the Delta twenty-five years before. A similar diminution may be strongly suspected in several other species.

Certain forms of life, that were associated for ages with the Egyptian and Nubian Nile, are no longer seen there: such were the lotus, the papyrus, and the bulrush. From ancient records we learn that formerly the hippopotamus and the crocodile came down the river as far as Memphis. Sixty years ago occasionally a live crocodile might have been found as far north as Kom Ombos, and forty years ago some still lingered about the Second Cataract. But the naturalist or sportsman of the present day bent on seeing the crocodile in its native haunts must seek it to the south of Khartoum.

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While some living species are fast vanishing the dead remain, and the visitor of today may not only look on the lifeless forms of once masterful Pharaohs, but also on many of the stupendous monuments they reared. One wonder of Egypt is, that despite the lapse of ages and countless hordes of despoilers so much remains as found and described by Herodotus, Diodorus, and Strabo. So thoroughly have modern explorers and travelers explained and described everything that nothing of the unexpected is left for us. Recently Charles Whymper has written most entertainingly of some of the well-known species of birds, and in 1872 Captain G. E. Shelley (a nephew of the poet Shelley) published a comprehensive handbook of the 351 species of birds that had been identified in Egypt. Since then a few more species have been added to the list.

Evidences of the veneration paid to animals, and more especially to birds by the ancient Egyptian constantly attract attention. Even in their hieroglyphic signs the forms of birds outnumber those of any other class of animals: there being twenty outlines of birds to twelve of quadrupeds, four of reptiles, three of fishes, two of insects, and one scorpion. Of the bird outlines a number are of the nondescript sort, while nine of them easily suggest the eagle, heron, ibis, vulture, goose, duck, hawk, owl, and plover families. These on the walls always appear in the same stereotyped forms, and they were probably outlined there by means of patterns.

The time spent by me in Egypt, amounting to five weeks altogether, included the whole of February, four days in March, and three days in the previous December. The last named period occurred when I was on my way to India. The routes traversed were the common ones; which mean the Nile journey from Alexandria to the Second Cataract, a distance a trifle short of a thousand miles, and the journey by train from Cairo to Port Said, thence by steamer through the Suez Canal down to the Red Sea, and the return trips over the same routes.

Three mornings were spent at Port Said, once said to be one

of the dreariest places on earth. It did not prove wildly attractive on any of these occasions. The mornings were those of December 24, February 2, and March 4. On the first of these, after having been up all night and chilled to the marrow, although clad in heavy winter clothing, I walked the steamer's deck for four hours in an attempt to become comfortably warm. Meanwhile the rays of the crescent moon were paled by the light of advancing dawn. Soon there flew overhead a Parasitic Kite and a little later seven Hooded Crows; a Gull was seen and one small bird in some trees that grew near the water's edge. These were the only birds seen about Port Said that day. On March 4, during a long ride to the south of the town, not a bird was seen. Gulls were fairly numerous over the water of the harbor, and on the shores at the back of the place were a few shore birds, among which Green Sandpipers and Ringed Plovers were recognized. Special mention of the scarcity of birds about Port Said is made, because of the very great abundance of them to be found a few miles away on Lake Menzaleh. This lake, averaging about forty miles in length by fifteen in breadth, is the winter home of myriads of water-fowl. Fortunately for travelers excellent views of these birds may be had both from the car windows and from the steamer's decks. Nowhere, not even in the exceedingly populous bird colonies of the Orkney and the Shetland Islands, were so many birds seen by me. Instinctively one begins to fear that it is too fine a paradise to last in this greedy age; and fears are confirmed by statements found in guidebooks and newspapers. Operations are already on foot for draining the lake.

Whoever enjoys jogging along after a horse traveling at the rate of four miles per hour, thus enabling him to scan well all the birds by the wayside, would for the same reason enjoy traveling on the Suez Canal. A stone's throw away there may be birds sitting on the telegraph wires. The boat seems to be drifting through the people's front yards, in which they are pursuing their daily tasks; or here and there, if the hour is an early one, black-robed people may be seen

driving their flocks of sheep and goats toward bleak stretches of land that show no signs of herbage, and farther away the caravans of camels are taking up their daily march. All is of interest; but the truly wonderful sights come while passing Lake Menzaleh. Embankments only a few rods in width separate the waters of the canal from those of the lake. Late in the afternoon of December 24 this portion of the voyage was taken, and a morning view was secured from the car windows on February 2. The other two passings were made in the night, to my great regret. Among the first birds to be seen were White Pelicans in groups, ranging in numbers from four to nearly or quite a hundred. These were near enough for identification, but it was impossible to say what were the large white birds in the distance that literally covered the mud flats until they looked as if covered with snow. There must have been acres that were thus occupied. Equally impossible was it to tell what species of ducks and of shorebirds were crossing the sky, "like a cloud of smoke," as one passenger described the sight. Common Heron could be identified, and in places Flamingoes. The latter in one place standing in a very long line looked like a row of pink rushes beautifully reflected in the water. Various outlines could be distinguished of birds too distant for a stranger to feel positive regarding their identification. Amid such surroundings the sun, glowing like a ball of fire, appeared to drop into the lake. The afterglow on sky and water made a panorama of beauty with its manifold shades and tints of color that was well worthy of several pages of print or yards of canvas.

Aside from the multitudes seen on Lake Menzaleh the journeys on the Suez routes did not yield many bird sights. Small birds too far away to distinguish their markings were seen, also members of the *Corvidae* that must have belonged to some Raven species. There were seen a few Black-headed Gulls (*Larus ridibundus*) on each of the three visits to the Canal. In March the head of one of these birds was beginning to show dark feathers. (On the previous day at Alexandria the changing color on crowns could be detected on numerous of

these Gulls.) A few times the Common Heron (*Ardea cinerea*) was seen, once an Osprey (*Pandion haliaëtus*), and while still in the Suez Canal a Coot swam by our steamer's side. About the Bitter Lakes were many Cormorants (*Phalacrocorax carbo*). Many of these were on the banks, and others were perched on the red frames that supported the beacon lights marking the course for the vessels. Every frame seemed to have its contingent; some having no more than four to seven birds, while others had from thirty to forty of them. A month later similar frames in the harbors of Alexandria presented like decorations. The largest number of Cormorants counted on one frame was seventy-six. On the Nile this species was seen more frequently than the books led me to expect. They were noted on eight days. The largest flock, numbering fifty-eight, was on a sand-bar near Gebel Abu Fedah. This mountain is said to be one of their breeding places. The nearly vertical faces of its cliffs stretch along the river's edge for several miles. The species was seen at both the First and the Second Cataracts. About the latter, on the six-mile trip by felucca from Wadi Halfa to the Rock of Abusir, a single Cormorant was seen in several places.

For one desirous of seeing birds the window of a moving train is usually a poor place, which proved true in the journeys between Alexandria and Cairo; also on those between Cairo and Port Said, and the short ones between Aswan and Shellal. An exception to the rule was the ride of February 27 from Assiut to Cairo. For long distances the railway track ran quite near an irrigation canal, whose proximity probably accounted for the large number of small birds that so often took flight. Some of the Little Green Bee-eaters (*Merops viridis*) frequently could be recognized among the birds a-wing, while others retained their positions on the telegraph wires as the train passed. In all several hundred of these were seen. This was my last meeting with the species, a few of which were met with in Egypt on five other days, making in all the same number of days for it there, that it was seen in India.

The other modes of travel in Egypt and Nubia were by boat, carriage, sand-cart and donkey-back, none of which yielded the satisfaction in bird viewing that was experienced on the few occasions when I could go on foot and alone. Since all bird observing was incidental to general sightseeing nothing more was seen than every tourist may see. On the other hand I fell far short of seeing the wonders reported by some trippers who, after a month spent on the Nile, write of seeing certain species in abundance that Shelley appears never to have seen, but credits them to Egypt on the authority of others. After excepting the marvelous numbers of birds about Lake Menzaleh it can be said that the birds on the rest of the Egyptian trip were far less abundant than they were in India, and not equal to the numbers I found in southern California during the previous winter.

The late Crown Prince Rudolph of Austria related hunting experiences that had a truly regal flavor to them: such as that of "beating" the garden of the Khedive at Heliopolis, where he killed a jackal, and another man killed a fairly large she-wolf. Better still was the hunt among the Pyramids of Gizeh, of which he wrote, "we got some Arabs to go up the second Pyramid and drive down the jackals which it harbors. We were, however, badly posted; so a couple of jackals broke through unhurt and skurried off into the boundless waste." The trustworthy book of Captain Shelley states that the Lanner Falcon (*Falco lanarius*), the Red-naped Falcon (*Falco Babylonicus*), and the Egyptian Eagle Owl (*Bubo ascalaphus*) breed annually on the Pyramids.

The itinerary of the ordinary traveler includes no hunting expedition to the Great Pyramids; instead a very commonplace donkey-back ride around about them. On my visit to them there were seen White Wagtails and Kites. No Eagle Owls were seen there or elsewhere except in cages in the Cairo Zoölogical Gardens. One cage was placarded as containing an American Eagle Owl. The bird of wisdom in it had a decidedly familiar appearance, and I am not absolutely certain that it did not give me a knowing, one-eyed wink, such

as any true American might give another in like circumstances, as dumfounded I reflected that the A. O. U. Check-List made no mention of Eagle Owls. Another glance at the placard went farther and discovered *Bubo virginianus,* thus clearing away the mystery. This was the beginning of finding our birds renamed in foreign lands, sometimes with freakish results exemplified by our Bluebird labeled as "Blue Robin." No doubt it irks the European to hear us call the House Sparrow "the English Sparrow"—one venture at least toward getting even in the renaming business.

There is no need that a learned ornithologist, with his specimens side by side, should point out that there are differences between the Hooded Crow (*Corvus cornix*) and the Indian House Crow (*Corvus splendens*), between the Parasitic Kite (*Milvus ægyptus*) and the common Pariah Kite (*Milvus govinda*), for good binoculars show quite plainly that the plumages of the African birds are not so dusky as those of their Indian cousins. The case of the Egyptian Vulture (*Neophron percnopterus*) is not so plain. It bears the same scientific name as does the White Scavenger Vulture. If there be differences in plumage and habits they failed to reveal themselves to the wayside observer. As it inhabits other countries on the Mediterranean as well as in Africa the latter name does appear more appropriate.

For twenty-six days in February, on a similar trip up the Nile and return, another person might make a better record of the birds seen; however, I did the best I could, yet on no day saw more than twenty-four species, the general average being thirteen, and the smallest number four. When we remember that part of the journey was in the tropics and that the northward movement for some of the birds had begun, then recall data given in Bird-Lore's Christmas Census, this Nile record appears very poor. There were but four days when a score or more of species were seen; the first of these days we spent at Edfou and up the river to Kom Ombos: the others were February 24, 25 and 26, and were spent at Thebes and Luxor and down the river to Abydos. Longer

trips on shore were taken than on other days, yet for the three days combined the total number of species seen was only thirty-five. The poorest day was in Nubia, when the daylight run of our steamer was from Wadi Halfa to Korosko; the five individual birds seen that day were two Turtledoves, a Raven, an Egyptian Vulture, and a Parasitic Kite. This Kite is worthy of special mention, as it and its mate were the only Kites seen in Nubia. On the passage upstream they were seen visiting a precipitous cliff that overhung the river a few miles above Derr, their behavior indicating that they had a nest there, and one was found there as we returned. The day under consideration was the only one, either in Egypt or Nubia, when the White Wagtail failed to be seen.

The Parasitic Kite was fairly abundant along the Nile to the First Cataract, above which the only birds seen were those near Derr. It was seen above the water most frequently and at the boat-landing, where, like Gulls, it snatched from the water the food thrown overboard. My records for the Hooded Crow stop abruptly at the First Cataract. The seemingly correct explanation for this is that the river higher up in its present condition offers no inducement to Kites and Crows in their role of scavengers. The only representative of the Corvus family seen between the two cataracts were a few Brown-necked Ravens (*Corvus umbrinus*), a species partial to deserts and rocky districts.

It was at Wadi Halfa, in the Sudan, that the largest numbers of Egyptian Vultures were seen in numerous small groups. In all, eighty-eight were counted, most of them on one walk of about a mile into the desert back of the town, where the apparent attractions were the dumping grounds for refuse matter. This species was seen every day in Nubia, and on a trifle more than half of the days in Egypt. Its non-appearance near the coast was probably due to its preference for a drier climate, such as is found farther in the interior. The Black Vulture (*Vultus monarchus*) was seen on two occasions, and the Griffon Vulture (*Gyps fulvus*) on

four. Once both species were together, there being two birds of the former species and twenty-one of the latter. They were sunning themselves on a sand-bar, their enormous wings spread out in characteristic fashion.

On the Egyptian Nile the Common Heron (*Ardea cinerea*) was seen on fourteen days, the maximum for one day being one hundred and six individuals, forty-two of which were on one sand-bar. They were usually some distance from our boat, and passengers seeking information from a dragoman were told that they were Storks. This not from a desire to mislead, but because he like others (who should know better) was mistaken in the identity. We were too early for the migration of the Storks, which is said to occur in March and April. I saw the White Stork (*Ciconia alba*) but once; they were in a flock of less than a score.

The Night Heron (*Nycticorax griseus*) was seen by me in the Cairo Zoölogical Gardens, where seventeen of the species were counted in one tree. While looking at them and wishing for some one who could give trustworthy information, a party arrived that was conducted by two officials of the Gardens, and it was my good fortune to learn from one of them, the distinguished ornithologist, Mr. M. J. Nicoll, that the estimate for the Night Heron then frequenting the Gardens was upward of a hundred, and the estimate for the wild Ducks was more than a thousand. Among the latter were many Shovellers and a smaller number of Teal. From the Nile boats Ducks in small numbers were seen in the distance on fourteen days. Other species seen at liberty and in abundance in the Cairo Zoölogical Gardens were Parrots and Egyptian Turtledoves.

The only representative of the Alcedinidæ seen in Africa was the Black and White Kingfisher (*Ceryle rudis*), called the Pied Kingfisher by some authors. A half dozen of the species were the most that were seen on a single day, but they appeared on half the days spent on the Egyptian Nile, and were not seen in Nubia. At times the steamers ran quite near the high banks, and on one occasion two of these King-

fishers were seen going in and out of a hole in a bank where excavations for a nest seemed to be under way.

Generally wherever the Kingfisher was noted over the river there would be met on shore its near relative, the Hoopoe (*Upupa epopa*). One Hoopoe, however, was seen in Nubia, while we were passing a very attractive green island south of Derr. Although an inch and a half longer than the Indian Hoopoe the difference between the two species is not apparent to the wayside observer. Shelley says that the Hoopoe breeds in Egypt. My story is not offered in proof of this, but rather as illustration that boys are much the same the world over. While at Luxor I left the steamer before breakfast each morning except one, and took a walk southward from the town. There a native boy about twelve years old was met, who followed about, telling me that he attended the American Mission School; that he knew Mahmoud Ahmed, our head dragoman on the S. S. *Arabia,* and various other items of personal interest, but not a word was said about birds, though he could see my frequent use of binoculars. On the day of our visit to the Valley of the Tombs the walk was postponed until late in the afternoon, but the boy was waiting for me, anxious to sell a nest of young birds three or four days old. He said they were Hoopoes. He was obdurate against returning the nestlings to the place where he found them, so he received nothing more than an Audubon-style lecture on the evils of nest-robbing.

Sand-bars in the Nile offer enticing resting-places for the water-fowl, the shore-birds, and for the boats that attempt to navigate its waters. If a tourist steamer refuses to be coaxed, cajoled, pushed or pried from some well-beloved sand-bank, where it has rested serenely for two or three days, the traveler must suffer loss of time on shore; but when the steamer "rests" no longer than one day the time may be made up by running faster, later at night, and earlier in the morning; for the Nile boat's schedule seems to partake more of the characteristics of rubber than of castiron, inasmuch as it is flexible and elastic as well as compressible. It ap-

pears to have been made with a weather-eye out for sand-bars, to avoid which the boats tie up at night at certain landing-places. The longest period that we "were stuck" on a bar was twenty-seven hours; and I, avidly covetous for every possible minute ashore, was all that time profoundly thankful that I was not on shore at Assiut awaiting the boat, where for eleven weeks I had expected that I should join the party with which I was to travel for two months. By a stroke of great good luck for me the time for the run between Bombay and Port Said had been shortened by one day, which enabled me to reach Cairo in time to join the party there. The component parts of that party had long been a matter for conjecture. Our conductor was a tall, broad-shouldered Italian, whose gray hat with a black band, visible at the front like the white plume on the helmet of Navarre, led us on through surging crowds from port to port of several Oriental countries. As for the rest of the party — the months were February and March, not the season of our American Thanksgiving, yet Miss Smith, the other unattended woman, and I held many a thanksgiving meeting to give thanks because of the congenial qualities of the rest of the party.

Twenty-seven hours on a sand-bar before a sister ship comes down and drags off the boat may be spent in various ways: there may be the watching of the faithful though fruitless attempt of the crew to get the steamer afloat, or the successful efforts of the crews of smaller crafts, in which the lifting power of broad Nubian backs applied to the underside of the boat, may play an important part. Or there may be by the river's edge the dreary sight of a shadoof in operation, requiring, if the bank be high, its human quota of six men to lift a pail of water to the thirsty land above. But every place may not furnish a strange bird perched on the mud column of an abandoned shadoof. Such a mud pillar stood near our halting place and the bird that frequently came to it answered to the description of the female Pale-chested Harrier (*Circus pallidus*), the only individual of that species seen by me.

Who shall decide which was the Hawk sacred to the ancient Egyptians, the Sparrow Hawk (*Accipiter nisus*) or the Kestrel (*Falco tinnunculus*)? For my part I was not always sure which of these small Hawks I was looking at against the dazzling sky; but when there was advantage of near views the Kestrel was the species more frequently seen. A half dozen or more of them would be on the wing most of the time over the larger temples, but there was no means of estimating the number of those that remained perched in the manifold nooks afforded by the ruins.

Because my second visit to the temple at Medinet-Abu was made in advance of the other visitors a view was obtained of a small Owl, halted in its chase after Sparrows. It retired to a niche prepared for it by the wise precaution of Rameses III. That monarch realizing how easily many of his forefathers had stolen the monuments of their predecessors resolved to forestall this thieving propensity in his descendants by making the job too hard for them in his temple at Medinet-Abu. This was done by cutting the hieroglyphics very deep. The depth of some will admit the hand quite to the wrist, a measurement of fully seven inches. There are many hundred of these holes in the walls. It was in the Second Court of the temple that the startled Owl sought refuge in the last character in the cartouche of Rameses III, that is cut into the south wall next to the cornice, and nearest the southwest corner. Having slipped into this recess, admirable for small Owls, it turned, watched me for a time, then slept. An hour later it sat there while Ibrahim Khalil Ghaleb, our Syrian dragoman from Mount Lebanon, delivered his lecture. Amid this multiplicity of detail it is hoped that a certain omission will not be detected; that no one will notice that I am unable to tell whether this small Owl was a Southern Little Owl (*Athene meridionalis*) or a Little Owl (*Athene noctua*) or *Athene glaux*.

The source of the food supply for the small Hawks and Owls is very apparent, but whence comes the food for the Sparrow themselves in the desert surroundings of such tem-

ples as those at Medinet-Abu and Wadi Sabua? In the far-away days of Moses no mention is made of *Passer domesticus* among the zoölogical plagues of Egypt, hence we surmise that this plague is of more recent origin. While speaking of plagues it may be well to advert to the theory recently advanced by a scientist, (whose name cannot be recalled,) that the cat became sacred to the ancient Egyptians, because it was observed that where cats were plentiful the people were spared the ravages of the bubonic plague. Instead of an abatement of the plague of flies, even to the last individual, their present abundance would suggest that all were religiously preserved, and that all had been breeding, according to the law of its kind, ever since. Having flies on him does not appear to trouble the modern Egyptian; possibly his face would feel immodestly bare without at least a dozen flies covering it. This pest swarmed about the temples, even about those at a distance from human habitations; so also did the House Sparrow with its hateful yelpings.

In the House Sparrow of Egypt Dr. John C. Phillips has detected sufficient variation from the type form to entitle it to the distinction of a subspecies, and has named it *Passer domesticus chephreni.* Thus to all our other troubles with this villian we have the additional trouble of subspecies, such as *Passer domesticus chephreni, Passer domesticus niloticus, Passer domesticus biblicus,* and *Passer domesticus indicus.* (Note the last syllable in each name!) To the ordinary tourist in their general appearance, their behavior, their indecent clamorings, and their other thoroughly objectionable qualities, these subspecies present no differences from *Passer domesticus,* and it seems that we might save a deal of bother by calling him and his whole tribe simply and plainly "the cuss."

My stay in Spain was entirely too brief to admit of observations on the character at home of the Spanish Sparrow (*Passer hispaniolensis*); but when met abroad his behavior was that of a perfect gentleman. The first meeting with this species in Egypt was just beyond the mud houses of Den-

derah, where a flock was quietly feeding among piles of doura stalks, and the conduct of these birds was in marked contrast with that of House Sparrows, which were hurling vituperations from their vantage places on the mud walls.

A little beyond the Sparrows were the first Blue-throated Warblers (*Cyanecula suecica*) seen by me. That was a glorious morning and held other charms aside from the first meetings with interesting birds. The temperature was more comfortable, it having risen to 50°, which was four and six degrees warmer than on previous mornings; the air was fresh, and the surface of the river shone like burnished silver. By rising at the first streak of dawn, omitting breakfast, and having my donkey boy follow with his animal for the return ride, I was able to enjoy the singing birds and the walk of a mile or more to the temple of Denderah in advance of the shouting, dust-raising crowd.

The schedule for the Nile boats, sagaciously planned after the fashion of a feast that offers the more dainty viands toward its close, reserved the visit to Abydos for the return journey, so it came about that the most enjoyable trips to the temples were the first (which was to Denderah) and the last, to Abydos. The roads to both lay between well cultivated fields and afforded the best opportunities I had for seeing the field birds. Baliana, the Nile port of disembarkation for Abydos, was reached about four o'clock in the afternoon of February 25, and the rest of the day was given to walks in the environs of that village. On the following morning the ride by carriage over fairly good roads to the ruins of Abydos presented various interesting features aside from those connected with avian life and death. All along the route small boys, armed with slings, were shooting at the birds. Very likely their slings differed slightly, if at all, from that used by the lad David, son of Jesse; and it is safe to argue that his skill was acquired by practice in shooting at birds. The birds seen most frequently that day in the order of their relative abundance were Crested Larks, White Wagtails,

Grey-headed Yellow Wagtails, Little Green Bee-eaters, and Hoopoes.

Larklike notes borne to the stranger's ears by some morning breeze may be his first introduction to the Crested Lark (*Galerita cristata*). The singer is easily found: a brownish bird slightly smaller than our members of the Alaudidæ family, also less distinguished in appearance in spite of his crest. Much tamer than the Prairie Horned Lark he will keep to a race along the roadway until nearly under foot, and appears better content to sing from no greater eminence than a clod than does his American cousin. This species appeared to be the most abundant and evenly distributed of Egypt's field birds. Sometimes its cheerful song was heard on the river when the steamer ran close to the shore. Although the Desert Lark (*Ammomanes lusitana*) abounds in Egypt it was not met by me until we reached Abu Simbel in Nubia, where a few individuals were seen; also on subsequent days.

The bird that was seen almost everywhere and on every day except one, was the White Wagtail (*Motacilla alba*). No place apparently was too dry and forbidding for its thorough searchings: railway tracks, roofs of houses and of steamers, bottoms of row-boats, river banks, and rubbish heaps all claimed its careful attention. Seemingly the northward migration for the White Wagtail had begun the last of February, when it was met in large numbers in the same desert spot back of Wadi Halfa, in which the Egyptian Vulture was found so abundant. The Wagtails were constantly changing places, rendering an exact count of them impossible, but their number there must have equaled one hundred and fifty. The thought did not then occur that later in the year I might meet some of these same birds three thousand miles to the north of that place, yet subsequent experiences indicated that such a meeting was not in the least improbable. Most unexpected meetings await the tourist on the highways of travel; of this class was the encounter with our own American bird, the Turkey; several of these domesti-

cated birds were strutting up and down the river front at Wadi Halfa, when we made our first landing there.

The Grey-headed Yellow Wagtail (*Budytes flava*) was identified in but two localities, which were along the road between Baliana and Abydos and on the plain of Thebes in the neighborhood of the Colossi of Memnon. All about these giant statues the land was green with crops of grain, in which the field birds made their home. There, under the shadow of these vast monuments three thousand generations of birds have built their nests and reared their broods, and a hundred generations of men have plowed, planted, and harvested the surrounding acres, while overhead circled untold numbers of Swallows, Swifts and Martins. Dynasties waxed strong, then perished; nearly all the known history of the world has been made, the poetry, art, inventions have been created, since those days wherein Amenophis III watched the erection of his famous Colossi. When for him there was the same smile on the face of nature, the same lilt in the song of the Crested Lark, the same flash of colors in the flight of the Grey-headed Yellow Wagtail that greet us today in the Valley of the Nile.

It is to be hoped that the wayside stranger, dependent on binoculars for identifications, will not be expected to speak confidently as to which species of Martins and Swifts were seen almost daily and frequently in large numbers along the Nile. In the matter of Swallows the task is easier: The Swallow (*Hirundo rustica*) — or its allied form that occurs in Egypt — was seen but a few times, its creamy underparts easily distinguishing it from the Egyptian Swallow (*Hirundo savignii*), whose underparts are reddish-brown. The latter was a very abundant species and was seen daily in Egypt, but not once in Nubia. In its choice of nest-site it resembles our Barn Swallow, and lacking the barn it builds the nest inside the mud hut of a native. The Pale Crag-Swallow (*Cotyle obsoleta*), I believe, was identified in several localities and was the only species found in the Valley of the Tombs of Kings and Queens. As we came out from the tombs of

Amenophis II, Seti I, and those of other Pharaohs, the Pale Crag-Swallows were flying back and forth in the narrow valley, as beyond doubt their ancestors have done through all the ages since these mighty "Kings of the South and North" were laid to rest in their wonderful rock-hewn tombs.

Warbler identification in North America is attended with puzzles and perplexities, but when our Warblers are set over against the Warblers of the Old World they appear on the whole to be brighter in colors and easier to name. Let one read the handbook description of Old World Warblers and he will feel their lack of salient points of difference. Let him examine museum specimens and he feels the same lack, as he feels it also in the field. The difficulties to be surmounted in identification will be appreciated when it is known that to a dearth of prominent markings there is added brevity in the glimpses attainable of the birds as they fly from one bean-stalk to another, or show themselves momentarily in the garden patches, for it was in such places, not in trees, that I found them, and felt reasonably confident of my identifications in the cases of the Fantail, Black-headed, Chiffchaff, and Blue-throated Warbler.

Perhaps the most winsome of the birds seen on the Nile trip were the Chats. The three species met were the Desert Chat (*Saxicola deserti*), the White-rumped Chat (*Saxicola leucophygia*) and a Black-eared Chat (either *Saxicola aurita* or *Saxicola amphileuca*). The meetings with all of them were in the southern stages of the journey on the border of Nubia and in the Sudan. Several of the White-rumped Chats were seen in the desert waste at the foot of the Rock of Abusir, where their dainty motions and showy dress contrasted strangely with their rugged surroundings. The Chat with black ear-coverts answered the description of *S. aurita*, though *S. amphileuca* seems to be the common form of that region.

A grove of palm-trees at Aswan looked inviting from the steamer's deck. To reach it was a long before-breakfast walk across the sands; when reached the palm-trees were

destitute of bird life except a couple of Turtledoves. Thereafter this was the usual experience with the palm-trees, not in them, but in species of acacia — the sont and the lebbek — and in tamarisk trees were the birds found. Such trees lined a street occupied by Europeans, in whose yards were trees, shrubs, grass-plats, together with blooming roses and oleanders. In one of the sont trees was found a Masked Shrike (*Lanius nubicus*), and in a nearby tree were two more of the same species. They were handsome fellows: their white underparts were bordered by bright rufous on sides of neck and breast; and their upperparts were blue-black trimmed here and there with creamy white and gray. The only other species of *Laniidæ* seen in Africa was the Pallid Shrike (*Lanius lahtora*), which bears considerable resemblance to our Shrikes.

Although the Egyptian Turtledove (*Turtur senagalensis*) is an abundant species and said to occur wherever there are palm-trees it was not seen every day. And in abundance the semi-domesticated Rock Doves and the Pigeons failed to meet expectations.

Many shorebirds were seen along the Nile too far away for identification, but a few opportunities for seeing some of them close at hand were afforded, and at such times there were seen some of the Ringed Plovers, the Green Sandpiper (*Totanus ochropus*), the Black-headed Plover (*Pluvianus ægyptius*), and the Spur-winged Plover (*Hoplopterus spinosus*). Great interest attaches to the last two species named, because of their alliance with the crocodile. The story of these social relations is one of the oldest bird stories in the world. Told first by Herodotus about twenty-three hundred years ago, it has been reaffirmed by many witnesses and denied by very many more skeptics. Those claiming that it is a true story have wrangled over various points, including these: whether the birds actually enter the crocodile's mouth or merely skirmish on the outside; whether the prizes sought by the birds were the fragments of flesh adhering to the reptile's teeth, or leeches inside the mouth, as stated by Hero-

lotus; or flies among which was the dangerous tsetse fly. Another point controverted is whether the Plover ally belongs to the Black-headed or the Spur-winged species, few people seeming to realize that this habit may be common to both species, as Mr. John Lea has suggested in "Romances of Bird Life." Since the crocodile still survives in the upper reaches of the Nile there is offered brilliant opportunities for the ambitious young man with the camera, who shall secure for us moving pictures of the Plovers at work cleaning the saurian's teeth. This is especially desirable because of the skepticism still prevailing in spite of John Lea's array of evidences. Beginning with the account given by Herodotus he quotes the testimony of several travelers in the more recent centuries and concludes with an account by Mr. John M. Cook, that was published in the *Ibis*. He with another man, aided by field glasses, watched a Spur-winged Plover enter the mouth of a crocodile, but the distance was too great for them to discern what the bird did. Thus the field for investigation remains wide-open for the man with a camera. Ziczac is the name by which the crocodile's friend is known to the Arabs. On our Nile journey we traveled on four steamers, so came under the guidance of nine different dragomans, only one of whom pointed out to us the Ziczac, carved on the temple walls, and repeated the story that is familiar to the natives. As given by him there was an admixture of the phenix fable with the well known narrative.

All of the party that went by the small boat to the Rock of Abusir were agreed that it was one of the most delightful excursions of the Nile trip. In addition to other pleasures it furnished several views of the Egyptian Goose (*Chenalopex ægyptiacus*), and some of these birds were near enough for us to enjoy their handsomely colored plumage. There is in Egypt a certain picture that I meant by all means to see. It is believed to be the oldest painting in the world and depicts six geese feeding. I had different guides on my two visits to the Egyptian Museum at Cairo and neither of them knew of this picture. Reproductions of it had made me fa-

miliar with its composition, hence prepared to reject my first guide's numerous announcements of "Here it is!" as he pointed out one Pintail Duck after another, sometimes varying his choice with a picture of some other species. Wearied at last by his impositions I told him I intended to see the picture and that he *must learn* from some attendant where it was located, which resulted in the speedy finding of it. In execution the oldest painting in the world would do no discredit to a modern artist. The treatment is somewhat decorative and is suggestive of the Japanese manner of laying on of colors. As a natural history study it is exceedingly remarkable, as the following quotation from Mr. Charles Whymper shows: "Probably no single work of art in all Egypt has been more widely copied than the picture of geese, which is now in the museum at Cairo. It came from the tomb of Ne fer maat at Medum and is universally known as 'the oldest picture in the world,' for it is ascribed to the earliest dynasty, and approximately about 4400 B.C. To a naturalist it is peculiarly interesting, but the interest is linked with sadness, as the subject of the picture being entirely of bird-life one would have thought that bird-life would be a subject of continued interest; but the reverse is very much the case, so much so, that though this very picture is known to thousands who have never been to Egypt, and many thousands more who have been to Egypt and gone to see this very picture, and bought photographs or copies of it, few or any have really interest enough in it even to learn or inquire what are the names of the geese depicted . . . . the two geese at the extreme left and right are Bean Geese, birds that one might expect the old-time artist to be familiar with, and the same is true of the two geese in the left-hand group, which are White-fronted Geese, as both are winter migrants to Egypt, remaining till March. Of the two remaining birds, from their markings the naturalist will have no doubt but that they are Red-breasted Geese; and there is a mystery, as they never come to Egypt, and being a northern bird, one is utterly at a loss to explain why the artist of that long-

distant date should depict that special Goose. That he did see the bird, and with fidelity drew it, are facts, and one can only conclude that zoölogical collections are no new thing, but that men nearly six thousand years ago, must have kept rare birds in captivity for the pleasure of their beauty, and that artists went to their zoölogical gardens or collections, and drew pictures of the inhabitants of far distant climes for the walls of their temples and tombs."

This picture does not furnish the sum total of evidence of the ancient Egyptian's interest in natural history collections. There is left amidst the ruins of Karnak the lower portion of the walls of a chamber, on which are sculptured in low relief representations of the fauna and flora of the countries of Asia invaded by Thothmes III. The carved similitudes of birds, animals, plants, shrubs, and trees are sufficiently accurate for identification by those familiar with the objects themselves. Sometimes on a panel is a portrait in stone of a tree, while on other panels of similar size are carved life-sized representations of leaves and fruit, or leaves and flowers. This is not one of the regular show places of the temple, but an assistant dragoman assured me that he knew "the garden of Thothmes III," and after the usual rounds he guided me to it. After that I had an hour beside the Sacred Lake, where I found several species of shorebirds, Coots, Ducks, and in the shrubbery Blue-throated Warblers, while overhead were the Kestrels and Swallows.

Another illustration is afforded us by the walls of the temple at Deir-el-Bahari, on which are portrayed scenes from Queen Hatshepsu's expedition to Punt. Most exquisite is the modeling of the captive Cranes that march in the procession of slaves and wild animals sent from the foreign land.

Egyptologists tell us that a bit of ornithological history is set forth in a certain picture in the temple of Rameses III at Medinet Abu. They tell us that it represents a coronation scene, that the king having assumed the double crown of the Upper and the Lower Kingdom, a priest sets at liberty four

carrier pigeons, bidding them carry the tiding to the north, south, east and west of his majesty's dominion. And they let this point out for us the antiquity of the service of the carrier pigeon.

We saw other pictures in which birds have a prominent place. This is true of the hunting scene depicted on an outer wall of the temple at Kom Ombos. It delineates a Nile boat covered with reeds that have been sprayed with bird-lime or a similar sticky substance used for catching birds. In this picture about a dozen species of birds could be recognized, their modeling being very good; the same could be said of the cat, which was climbing the stalks to get the birds, though the cat was smaller than the birds. The motive of such pictures can be recognized, but there are many others in which the part played by the birds is symbolic with hidden significance. Seven charming little birds, colored blue, are carved on the prow of the boat in the Judgment Hall of Osiris at Karnak, but in the "holy of holies" at Abydos there are six blue-colored birds and a fish for adornment of the prow, their purport no one seems to know. But the symbolism of the hawk and the vulture, appearing in countless numbers of decorations, is understood to some extent. In the wall pictures a small bird, supposed to typify the departing spirit, hovers over the body of the dead. This the dragomans will always identify for you as a sparrow. Had these fellows ever lived in America and fought *Passer domesticus* they might have very good reasons for selecting it as the emblem of eternal life.

The island of Philæ, for centuries esteemed the gem of the Nile, once the theme for universal praise, endeared to all who saw it, now sits submerged beneath the desolating waters of modern commercialism, a place to close one's eyes whilst passing, a subject to be shunned. Few are so pious at this point as to be unwilling to insert another dam when viewing the damage done by the waters above Philæ. So recent are the changes wrought in Nubia by the Aswan dam that some account of them may not lack interest. Such effects may be

called far-reaching since they reach nearly two hundred miles: that is several miles beyond Abu Simbel to a point scarcely more than a score of miles below the Second Cataract. For many miles south of Philæ the depth of the water is so great that no more than the tops of the tallest palm-trees appear above the surface. As we go farther south inch by inch more of the trees show above the water, until at the end of about two hundred miles small deposits of Nile mud mark the last effects of the damming. In front of the famous rock-hewn temple of Abu Simbel, which is 175 miles above the dam, may be seen one of the results. It is in the form of about twenty acres of land that has been formed there since the dam was built. A portion of it is under cultivation, in other places the Nile mud is baked in the sun until it resembles broken pottery, and the ground is seamed with crevices, some of which are a foot and a half to two feet in depth. Formerly the Nile boats lay close to the cliff, and in recent years the visiting steamers furnished electricity for the lighting of the temple before the new land was formed.

Abruptly, almost as abruptly as darkness fills a room at night when the lights are turned off, come changes on the Nile as we enter Nubia. The dam has caused some of these changes and intensified those previously existing. Forty years ago, when Miss Amelia B. Edwards made her observations that are recorded in "A Thousand Miles up the Nile," the arable land between Philæ and Wadi Halfa averaged from six to sixty yards in width. This slender strip is now under water for the greater part of the year. The natives driven to the rocky heights above their former homes have in some places gathered pitiably small patches of soil, some no larger than a grave, upon which vegetation was growing. For the dispossession the Government paid them a small sum with which to rebuild their homes. Their new homes of stone look more comfortable than the mud-walled houses of Egypt. They exhibit unique taste in mural decoration, for vaulting ambition is displayed in the enrichment of the frieze. The unit of design is a plate. There appear

repetition, variety, and contrast in the arrangements of the plates, showing that the laws of good design have not been overlooked. Dinner-plates, soup-plates, large plates, small plates, various kinds of plates are set fast in the mortar. Above one door there was a large plate in the middle with a smaller one on either side. Another house displayed a single plate with a decoration around its entire edge. A peep into one of these houses, which was about ten feet square, discovered a bed, a bench, and some shelves holding a few bottles, cans, and dishes.

To visit temples we went ashore at Kalabsheh, Dendur, Gerf Hossayn, Wadi Sabua, Amadah, and Abu Simbel. From the nearby hamlets most of the adults were absent at work in Cairo, but their children were left at home with the old and disabled. Upon landing the children came racing down to meet us. With relief it was noted that their faces were free of flies, most of the flies having been left behind in Egypt. All of the children were keenly alert to earn a few piasters, their strongest role consisting in poses for the amateur photographers. Considerable invention was shown in the design of costumes that would catch the eye. At one landing place on the Nile a tiny tot of a girl was busily working a miniature shadoof, apparently entirely unconscious of our arrival. She received her reward. At another place a juvenile showman exhibited a large green chameleon, while others brought their household pets, a puppy or a full-grown dog. But animals were rare. At Kalabsheh I saw one donkey. Such scarcity of life, both animal and vegetable, was characteristic of Nubia nearly a half century ago, when Miss Edwards wrote of it in these words: "Meanwhile, it is not only men and women whom we miss — men laboring by the river-side; women with babies astride on their shoulders or water jars balanced on their heads — but birds, beasts, boats; everything that we have been used to see along the river. The buffaloes dozing at midday in the shallows, the camels stalking home in single file toward sunset, the water-fowl haunting the sandbanks seem suddenly to

have vanished. Even donkeys are now rare; and as for horses, I do not remember to have seen one during the seven weeks we spent in Nubia."

Between Aswan and Abu Simbel almost all the birds that were seen were either on the wing, or perched in the tops of partially submerged sont trees. Sometimes we ran near enough these trees to allow of identification of the birds, at other times they were clearly seen but had to be assigned to the class of birds unidentified. Of these there were several, both in Egypt and Nubia, that by me had to be remembered in the great class of the unknown.

OWLS, AS REGARDED BY THE SCIENTIST, THE THE AGRICULTURIST, AND THE SPORTSMAN.

BY R. W. SHUFELDT.

(Photographs from Life by the Author.)

When Doctor R. Bowdler Sharpe, of the British Museum, published his invaluable work entitled *A Hand-List of the Genera and Species of Birds,* he recognized no fewer than thirty genera of Owls in the world's avifauna, and, according to him, they have been created to contain 316 species of these very interesting birds. This classification was made in 1899, since which time there have doubtless been many more species added to the list. Some of these thirty genera contain but one species, while others contain all the way from two to eighty, the latter number being found in the genus *Scops.* Besides these existing species of owls science recognizes quite a number of extinct forms, which are known to us only through their fossil remains.

The owls of the United States, according to the last Check-List of the American Ornithologists' Union, fall into twelve different genera, and there are at least forty-three species and subspecies of them. As in the case of the Old World forms, too, several species of large fossil owls have been dis-

covered, which go to show that birds of this kind have existed in North America for a great many thousands of years.

Our United States owls have interested me for nearly half a century, and during all that time I have kept several species of them as pets; have shot specimens for my own and other collections, and photographed from life many of the different species. Without referring to any special statistics or censuses with respect to these birds in nature, I am of the opinion that, with the exception of certain places and in the vicinage of large cities, owls are about as numerous elsewhere as they were fifty years ago. This is due to the fact that man does not use them for food; other animals seldom prey upon them, and the majority of the species are entirely nocturnal in habit. Around cities and towns, however, owls are almost invariably slain when a man or a boy comes across one of them in the open with the means of shooting the bird or otherwise killing it. There are but few exceptions to this rule anywhere in the course of a year, and through such practices altogether too many of these useful birds are, in sheer wantonness, annually destroyed.

Throughout the world there are thousands of skins and mounted specimens of all kinds of owls in the collections of private individuals, ornithologists, and museums, and these are of great value to science. There are also many skeletons of owls in similar hands and institutions, and the study of these has thrown much light on the general history of birds, in so far as such material can do so. Studies of this character are extremely important, and up to the present time have by no means been exhausted, in so far as owls are concerned. Indeed, several of the structures in the anatomy of these birds are of wonderful interest, as the assymmetry of the skull in some species; their extraordinary ears; the osseous platelets of the eyes, and so forth, all of which I have studied many times and described in various publications.

In this age, however, owls are, as in the case of all of our birds, looked upon in an entirely different light from what they were fifty years ago, when they were far more numer-

Fig. 1. Saw-whet Owl.

ous. In those days, no one thought of considering birds of any kind in their relation to man and his material interests; while, as we at the present time know, in this age of commercialism, our Government employs a staff of economic ornithologists, who are engaged in making estimates of the value of every species of bird in our avifauna, in so far as they affect our forests, our farm products, and our market supplies of feathered game. To arrive at these estimates, vast numbers of birds are sometimes sacrificed, and often with no better result than to enforce, through federal legislation, some expensive blunder.

In these extensive investigations, owls have come in for their full share of being scrutinized with respect to their habits and the contents of their "stomachs," — the latter line of examination costing many a one its life. These investigations need not detain us here; and, aside from such value as owls have for the scientist, as pointed out above, it is of the greatest importance that agriculturists and sportsmen should ponder well upon the question as to the value these birds have for them in their — it must be admitted — widely different pursuits.

With but comparatively few exceptions, agriculturists believe, as did their ancestors before them, that owls are simply to be classed among such other "vermin" as rats, skunks, and foxes, and this quite irrespective of their size, species, or genus. This is a a long way from being true, — indeed it is quite the reverse of the truth; for, apart from some of the medium sized or larger owls occasionally helping themselves to a fowl from the poultry-yard, these birds are the best friends the agriculturist — or more particularly the dealer in feathered live-stock — has in the entire range of wild bird life. As a matter of fact, nearly all owls hunt at night, at a time when most all farm-yard fowls are at roost and under cover, and therefore safe from their attacks. Turkeys, guinea-fowls, and ducks may, at times, form exceptions, and the Great-horned owl from time to time captures one of their kind; but even this is by no means a common occurrence.

Most of the stories, as they have come down to us through the generations, have arisen among the farmers in those sections of the country where such barn-yard fowls as turkeys and chickens, not having been supplied with shelter, have

Fig. 2. Subadult Barred Owl.

habitually roosted in the trees and elsewhere outside the barns and outbuildings. Where this has been the case on farms, where the Great-horned owl is more or less common

in the neighborhood, such fowls have suffered from its nocturnal depredations, until the shotgun has put an end to its raids.

No such harm could come from the three species of owls forming the illustrations to the present article, which I have selected from a large collection of photographs of such subjects, taken by me from life during the past eight or ten years.

Figure 1 is of the little Saw-whet owl (*Cryptoglaux a. acadica*), a form with a body about the size of a robin. Figure 2 is a subadult Barred owl (*Strix v. varia*), the young of which is shown in Figure 3. This medium sized species may occasionally get away with smaller denizens of the poultry-yard, including pullets and chicks; but I do not believe it happens nearly as frequently as many people believe or tell about. Then, when we come to the common Screech owls of the genus *Otus*, the old and young of which are shown in Figures 4 and 5, it is very questionable, in my mind, that they can be considered at all in the light of habitual robbers of the hen-roosts or the pigeon-cotes. There are many species of this genus distributed all over the country, and they prey principally upon small birds, rats, mice, other numerous small rodents, and shrews.

As a matter of fact, our various species of medium sized owls are of vast importance to agriculturists everywhere throughout the country, for they destroy millions of mice, rats, weasels, and other mammals, which eat up, in the course of a year, thousands of tons of grain and other farm produce; and were these animals not kept down by such birds as the owls, they would, in some parts of the country, eat the farmer and agriculturist out of house and home, compelling him to seek other employment for a livelihood. Indeed, it would be an excellent thing to not only encourage such owls as the Barn owl for example to breed and multiply in the neighborhood of large farms, but also to introduce and protect the bird, in such localities as it does not normally occur.

So much, then, in regard to the relation of owls to the welfare of the agriculturist. We have next to do with the

FIG. 3. Young Barred Owl.

question of the value of these birds to the hunter of small varieties of feathered game in this country. We may omit any other kind of game that the sportsman pursues, as hares, rabbits, squirrels, and the like, for they can only be taken by the larger species of owls, and often with advantage to man, as in the case of Jack Rabbits, and so on. There is no doubt in the world but that the owls in this country, of many species and of all sizes, in the course of a year capture and consume a good many game-birds of all kinds. It is simply as birds of prey that they do this, however, and with the sole object of sustaining life. Moreover, it is only the medium sized and larger owls that capture such game bird as quails, grouse, turkeys, and so on, though the smaller species may prey upon the young of such game occasionally. Man, however, is the great destroyer of game-birds of all species; and between his gun and his traps he is gradually, but with marked certainty, exterminating all such species in the world's avifauna, just as he did the wild pigeon in the last half century.

An average gunner who hunts regularly will kill more feathered game in one season than any species of owl will in the course of its natural life-time; so that, when we come to compare the number of owls in the country with the number of men who habitually hunt and kill feathered game, it is safe to say that we may almost reckon the amount of destruction along such lines by the former as practically *nil*.

Audubon, who published something in regard to the habits of a few of our owls, says that the food of the big Snowy owl "consists of hares, squirrels, rats, and fishes"; but that "it also watches the traps set for muskrats, and devours the animals caught in them." Of the Burrowing owl he says: "They are strictly diurnal, feed principally upon grasshoppers and crickets, and, according to the Indians, sometimes upon field-mice"; while with respect to the Acadian owl, he fails to mention what its food consists of, though he figures it with what appears to be a mouse in its talons.

In the case of the Barn owl, he says that "After long ob-

servation, I am satisfied that our bird feeds entirely on the smaller species of quadrupeds, for I have never found any portions of birds about their nests, nor even the remains of a single feather in the pellets which they regurgitate, and which are always formed of the bones and hair of quadrupeds."

Fig. 4. Adult Screech Owl.

"The Barred Owl," he says, "is a great destroyer of poultry, particularly of chickens when half-grown. It also secures mice, young hares, rabbits, and many species of small birds, but is especially fond of a kind of a frog of a brown colour, very common in the woods of Lousiana." So far as this report goes, the sportsman has nothing in particular to

hold the Barred owl up for, and in these days they probably do not kill as many young chickens as they did when Audubon lived, and whose observations, by the way, were largely confined to Louisiana, where, so far as my experience car-

Fig. 5. Young Screech Owl.

ries me — and I've kept chickens in Louisiana — there is a flightless, featherless, black owl that will get away with more chickens in one night than a whole family of Barred owls will in the course of two or three months.

There is no question but that the Great-horned owl preys upon feathered game of all kinds, but the bird by no means confines itself to that line of diet, for it is equally fond of many of the medium sized and smaller mammals, as opossums, rats, squirrels, young hares; rabbits, etc., and it will, when occasion offers, consume dead fish when washed ashore, in which habit he is surely performing a public service.

Audubon does not say a word about the food of the Screech owl, beyond the fact that it "pursues large beetles"; while on the other hand he devotes the major share of his account of the bird to mixing up fact and tradition in regard to its two phases of plumage, and taking Wilson to task in regard to what he said about it.

Taking everything into consideration, then, with respect to the habits and food of owls, as such matters affect the welfare of man, it is perfectly safe to say, in truth, that upon the whole these birds are good friends to our race in the long run, and fully deserving of our protection and encouragement. To persistently destroy these birds would be a grievous error, as in practically all cases where man has upset the balance of nature, it has generally reacted, in boomrang fashion, by giving him a fearful rap for his pains.

PLAINFIELD, NEW JERSEY, BIRD CENSUS.

BY W. DEW. MILLER AND CHARLES H. ROGERS.

In 1914 we were accompanied by Dr. William H. Wiegmann. We started at 3:50 a. m. from East 7th Street and walked northward across the city and took a devious route through and over the Watchung Mountains to the Passaic River, up whose south bank we went to the Dead River, and up it half a mile to a certain marsh, which we reached just at sunset. Thence we took the shortest road back to North Plainfield, where we boarded a car at 10 p. m., except that W. DeW. M. lingered on the way to listen to the Virginia Rail and got in somewhat later. Weather fine; cool N. W.

breeze; 47° at start, 54° at return. We satisfactorily identified 104 species of birds, which we consider a good list for an absolutely inland region, without water, save for ponds and small streams.

In 1915 we started five minutes later and followed the same route, except that we were forced to take shelter so much from the rain that we did not reach the Dead River till nearly dark, and so did not go up to the marsh, but returned by road to North Plainfield in time for the 9 p. m. car. Weather cloudy except for first two or three hours; frequent showers in a. m.; moderate S. E. wind; 45° at start, 51° at return. Only 89 fully identified species, due partly to the weather and partly to the fact that it was not nearly so much the height of a big wave as it was the previous year.

While not always strictly together, we were always within hail and each of us noted every species recorded except that W. DeW. M. alone heard the Whip-poor-will in 1914 and the Black-Billed Cuckoo in 1915. The numbers of individuals recorded are the result of actual count (as far as possible) and were entered with exceeding frequency during the progress of the hunts. As we both did not hear or see everything, when we differ the larger number is here given, and we believe these numbers to be conservative.

Strangely enough, exactly the same twenty-four species of *Mniotiltidæ* were seen each year, but their number of individuals was 334 in 1914 and 186 in 1915, this difference being nearly the difference in the total number of individuals noted, 1112 in 1914, 929 in 1915. The larger numbers of Thrushes and particularly of White-throated Sparrows and Myrtle Warblers in 1915 is noteworthy.

That it is not well on a big day to quit work with the arrival of darkness is shown by the circumstance that in 1914 we added five species to our list after it had grown too dark to see them; these were Virginia Rail, Woodcock, Greater Yellowlegs, Screech Owl and Whip-poor-will. The Woodcock did not even say anything, but we all heard clearly the characteristic twittering of the wings of one which flew

across the road just ahead of us at about the height of telegraph wires.

On May 31st, 1915, C. H. R. followed alone in sixteen hours the complete 1914 route and noted 72 species. This list has been accepted for publication in the August number of "The Oriole," published by The Somerset Hills Bird Club, Bernardsville, N. J.

	1914	1915
Great Blue Heron	1	
Green Heron	1	1
Black-crowned Night Heron	2	
Virginia Rail	1	
American Woodcock	1	2
Least Sandpiper		7
Greater Yellowlegs	1	
Solitary Sandpiper	4	6
Spotted Sandpiper	15	11
Killdeer	5	
Mourning Dove	10	11
Marsh Hawk	2	1
Cooper's Hawk	2	1
Red-shouldered Hawk	2	1
Broad-winged Hawk	1	
American Sparrow Hawk	1	
Barred Owl	1	
Screech Owl	1	
Yellow-billed Cuckoo		3
Black-billed Cuckoo		1
Belted Kingfisher	2	5
Hairy Woodpecker	2	1
Downy Woodpecker	9	3
Red-headed Woodpecker	2	
Northern Flicker	10	13
Whip-poor-will	1	
Chimney Swift	31	35
Ruby-throated Hummingbird	2	2
Kingbird	8	15
Crested Flycatcher	17	14
Phœbe	12	7
Wood Pewee	6	2
Yellow-bellied Flycatcher	1	
Chebec	9	
Blue Jay	30	15
American Crow	34	22
Starling	7	17
Bobolink	14	5
Cowbird	4	2
Red-winged Blackbird	14	5
Meadowlark	11	8
Orchard Oriole	5	
Baltimore Oriole	20	15

Purple Grackle	12	14
House Sparrow	37	60
American Goldfinch	20	15
Vesper Sparrow	7	5
Grasshopper Sparrow	4	1
Henslow's Sparrow	1	1
White-crowned Sparrow	1	
White-throated Sparrow	6	44
Chipping Sparrow	21	19
Field Sparrow	15	7
Song Sparrow	66	54
Lincoln's Sparrow		3
Swamp Sparrow	6	4
Towhee	13	8
Rose-breasted Grosbeak	6	5
Indigo Bunting	7	4
Scarlet Tanager	13	7
Purple Martin	4	9
Cliff Swallow	1	2
Barn Swallow	23	20
Tree Swallow	1	12
Rough-winged Swallow	2	11
Cedar Waxwing	3	25
Red-eyed Vireo	12	17
Warbling Vireo		2
Yellow-throated Vireo	8	3
Solitary Vireo	4	
White-eyed Vireo	1	
Black and White Warbler	8	9
Worm-eating Warbler	6	2
Blue-winged Warbler	12	11
Nashville Warbler	2	3
Tennessee Warbler	1	1
Northern Parula Warbler	22	6
Cape May Warbler	3	7
Yellow Warbler	6	3
Black-throated Blue Warbler	35	9
Myrtle Warbler	10	27
Magnolia Warbler	32	6
Chestnut-sided Warbler	16	3
Bay-breasted Warbler	6	1
Black-poll Warbler	4	1
Blackburnian Warbler	13	3
Black-throated Green Warbler	17	9
Oven-bird	25	25
Northern Water-Thrush	12	12
Louisiana Water-Thrush	1	2
Maryland Yellow-throat	42	34
Yellow-breasted Chat	2	1
Wilson's Warbler	8	2
Canada Warbler	23	2
American Redstart	28	7
Catbird	21	18
Brown Thrasher	2	1
House Wren	6	1

White-breasted Nuthatch	2	
Red-breasted Nuthatch	1	
Tufted Tit	6	5
Chickadee	3	2
Wood Thrush	19	21
Veery	17	22
Gray-cheeked Thrush	1	2
Olive-backed Thrush	5	8
American Robin	94	82
Bluebird	4	8

MISSISSIPPI KITE IN NEBRASKA.*

BY PROFESSOR B. H. BAILEY.

In "Birds of Nebraska," by L. Bruner, R. H. Wolcott and M. H. Swenk, page 50, *Ictinia mississippiensis* (Wilson) A. O. U. No. 329 is referred to as follows: "While the known range of this kite would bring it within our borders, the record by R. E. Dinges as given in Bruners' 'Notes on Nebraska Birds' is very likely an error."

The A. O. U. check list gives its range as "Lower Austral Zone from Kansas, Iowa, Illinois, Southern Indiana, and South Carolina, South to Texas and Florida; winters in Florida, Southern Texas and South rarely to Guatermala; accidental in Colorado, South Dakota, Wisconsin and Pennsylvania."

While in Omaha, Neb., the writer purchased for the Coe College Museum a specimen of this species which was in a local taxidermist's shop, and which was shot by the man from whom the bird was purchased.

The kite was killed a few miles south of Omaha in November, 1912, and although the sex was not determined at the time it was mounted, the following description from the work by N. S. Goss, "History of the Birds of Kansas," is so in accord with the specimen in hand as to leave no doubt that this bird is a young female. "Head, neck and lower parts white with a yellowish tinge; this most perceptible on the tibiae. Each feather with a median ovate spot of black-

* Read before Iowa Academy of Science, May 1st, 1915.

ish brown, more reddish on the lower parts. The chin, throat, and a broad superciliary stripe, are immaculate white. Lower tail coverts each with a median acuminate spot of rusty, the shafts black. Upper parts brownish black; wing coverts, scapulars and interscapulars, feathers of the rump, and the upper tail coverts, narrowly bordered with ochraceous white, and with concealed quadrate spots of the same; primary coverts, secondaries and primaries sharply bordered terminally with pure white. Tail black (faintly whitish at tip) with three (exposed) obscure bands of a more slaty tint, this changing to white on the inner webs, in the form of angular spots forming the bands. Lining of wing pale ochraceous, transversely spotted with rusty rufous; under primary coverts with transverse spots of white." "Iris brownish red, legs and feet brownish."

The following measurements were taken from the mounted specimen secured from Nebraska:

Wing, 11⅞ in. 200 mm.
Tail, 6¾ in. 171 mm.
Tarsus, 1.35 in. 33 mm.
Bill without cere, ⅝ in. 15 mm.

This is believed to be the first record of *Ictinia mississippiensis* authenticated by a specimen taken in Nebraska.

Coe College, Cedar Rapids, Iowa.

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EDITORIAL

The lateness of the present number of the Wilson Bulletin is due to the editor's absence from home from the 20th of June to the 14th of September. He was conducting a party of sixteen from Chicago to Seattle, and from there up through Admiralty Inlet, and out through the Straight of Juan de Fuca to Neah Bay, and from there out on the Pacific and down among the islands and on the coast to Moclips. It was a camping trip, conducted as a summer class from Oberlin College. The sea life of the tide flats was studied as well as the life of the primeval spruce, cedar and hemlock forests. The trip proved so successful, so enjoyable, and so profitable that he proposes to organize a party for the same trip next summer, to occupy the time between June 19 and July 29.

The Bluebird, edited and published by Dr. Eugene Swope, Cincinnati, is publishing a series of color plates of the eggs of North American Water Birds in connection with articles from the pen of Dr. R. W. Shufeldt. The ten plates which are ready show the eggs natural size, and the colors and markings reproduced with fidelity. It is a valuable feature of this enterprising publication.

We are pleased to note that The Guide to Nature has introduced a department of Ornithology, which is edited by Harry G. Higbee. In the September number there are several good reproductions from photographs. The introduction of this feature should serve to increase the popularity of this magazine of the Agassiz Association.

The editor will have something to say about certain interesting features of his summer experiences in the December Wilson Bulletin. It will be recalled that a number of articles appeared from his pen about his trip down this same coast in June, 1907. The intervening eight years has witnessed marked changes, which it is proposed to note at this time.

Many readers of the Wilson Bulletin must have spent some of the summer where they have been able to gather interesting facts about bird life. The editor will be glad to receive accounts of these studies and the conclusions reached for the pages of the Bulletin. The real value of such studies is appreciated only when you write them up for publication.

GENERAL NOTES

BIRDS AND THE WORLD WAR.

A private soldier now on leave in England says birds warn the allies of German gas attacks. Long before the smell of the fumes can be detected by the man in the trenches, there is to be heard a clamouring of alarmed and awakened birds. These soon fly away beyond the reach of the deadly fumes, but the soldiers have had warning, and meantime adjust their respirators, and make other preparations to met the gas. This item of war news is an addendum to the remarks in Dr. Shufeldt's very interesting paper on Ornithology and the War in Europe.

J. H. GURNEY.

Keswick Hall, Norfolk.

TAVERNER ON CORMORANTS VS. SALMON.—On account of numerous complaints that cormorants were damaging the salmon fisheries of the Gaspe coast of Quebec, Mr. P. A. Taverner and two assistants investigated conditions there for two months during the summer of 1914.

General observations did not support the contention that cor-

morants destroy salmon, nor did stomach examinations. Of 32 stomachs examined, 5 were empty, 3 contained unrecognizable food, 16 contained sculpins, 5 herrings, one capelin, one eel, and 2 tomcod or allied fishes.

Furthermore, the bulk of evidence shows that salmon have lately been increasing from year to year. "The cormorants are also generally increasing in number, the rookeries are enlarging and new ones being established. These facts taken together do not indicate that the cormorants are markedly harmful to the salmon."*—W. L. M.

* Mus. Bul. 13, Canada Dept. of Mines, 1915, p. 14.

INCUBATION PERIOD OF THE GANNET.

In the very interesting list of periods of incubation, as noted in different birds, contributed to your pages by Mr. F. L. Burns, the period allowed for the Gannet (*Sula bassana* (L)) is given at 39 days, but this seems too short.

An egg laid on April 22d at the Bass Rock on the east coast of Scotland, and at once inscribed with the date by Mr. J. M. Campbell, the lighthouse keeper, was not hatched until June 5th, which gives a period of 44 days.

Another Gannet's egg, laid in confinement at Brighton in Sussex, is recorded by the late Mr. E. T. Booth to have hatched out about the 43d day, as stated in "The Gannet" (p. 355), where the *pros* and *cons* of the subject are discussed at some length and different opinions quoted.

J. H. GURNEY.

Keswick Hall, Norwich.

A NEW LOUISIANA BIRD.

The observance of a solitary species of bird life has not only supplied the Louisiana list with a new bird but with the one order of the seventeen found in the United States that has been missing since the avian life of the state has been studied by those who preceded Audubon and those who have followed him.

The species observed was a Wilson petrel (*Oceanites oceanicus*), sometimes known as one of "Mother Cary's Chickens," of the order *Tubinares*, or Tube-nosed swimmers, which includes, besides the petrels, the fulmars and shearwaters.

The discovery was made by Herbert K. Job, head of the Department of Applied Ornithology of the National Association of Audubon Societies, and Stanley Clisby Arthur, ornithologist of the Conservation Commission of Louisiana, while they were on an expe-

dition to the breeding islands along the Louisiana coast west of the Mississippi river, June 23d, 1915.

The petrel, when observed, was about a mile off shore, paddling the rough waters of the Gulf of Mexico, and about seven miles west of Grand Isle. The stranger to the Pelican State circled the commission's petrol boat "Opelousas" but, although efforts were made by throwing lard on the waters to entice it close enough to be photographed, it finally flew out of sight, however not before the ornithologists had thoroughly studied it through binoculars for over a quarter of an hour.

Although both Mr. Job and Mr. Arthur kept a close watch for other specimens during the remaining five days of their trip no other petrel were sighted, and the specimen they did see was absolutely alone.

NEW DUCK SPECIES BREEDING IN LOUISIANA.

Since the establishment of the vast game and waterfowl preserves in Louisiana along the Gulf of Mexico, particularly the State Game Preserve and Marsh Island, it has been observed that there has been a marked increase in the species of waterfowl and shore birds that seek these marshes for breeding purposes.

According to a late report made by Stanley Clisby Arthur, ornithologist of the Conservation Commission of Louisiana, to his superior, President M. L. Alexander, four species of wild duck that go to the northern tier of states for the rearing of their young have remained on the protected areas of the southern state to perform that function.

The Wood duck (*Aix sponsa*); the Florida duck (*Anas fulvigula*), and in few numbers the Blue-winged teal (*Querquedula discors*) have, until the spring of 1915, constituted the Louisiana list of *Anseres* breeding within that state's borders. Observation and investigation by Mr. Arthur of the breeding birds this spring, which has only partially been completed, show that the Mallard (*Anas platyrhynchos*); the Gadwall (*Chaulelasmus streperus*); and the Bald-pate (*Marcea americana*) nested in few numbers on Marsh Island. The conservation agent there noted that the height of the breeding season was from April 1st to May 15th. Nesting was observed as early as March 20th, however.

On June 17th the commander of the Conservation Commission's patrol boat "Louisiana" observed a flock of 28 Lesser Scaup (*Marila affinis*) ducklings swimming in the waters of Lake Borgne. The little waterbirds were with the adult parents and a castnet was used in an endeavor to capture some of them to make sure of identification. According to Captain Sandras' report the ducklings were

but two weeks old, establishing beyond all doubt that they were bred in the Louisiana marshes.

The conservation agent on Marsh Island also discovered the Long-billed curlew (*Numenius americanus*) breeding on the marshland of the preserve under his patrol. During the visit of former President Theodore Roosevelt to the bird reservation along the Louisiana coast east of the Mississippi river during the early part of June, nests and eggs of the Man-o'-war bird (*Fregata aquila*) were found, thereby settling the question whether this bird is a Louisiana breeder or not.

NESTING OF A CHIMNEY SWIFT IN A HOLLOW TREE.

Several years ago, in company with an ornithological friend, Walter Bennett, I made a canoe trip through the big woods that cover the northern portion of Minnesota. At Walker, a lumber town on Leech Lake, we purchased a birch bark canoe of the Ojibway Indians and plunged into the wild, traversing a tangle of lakes and streams and swamps filled with interesting wild life, especially birds. Among our varied experiences, one of the most interesting was the discovery of a pair of tree-nesting chimney swifts. Of course, as is well known, this was the universal custom of these birds before the advent of the white man with his convenient chimneys. Like some other birds, the chimney swift has taken to modern improvements.

Far in the heart of the wilderness, a hundred miles from a lemon or a railroad, we one night pitched our white tent upon the clean, white sands of a little island. Behind us rose a large dead pine, its gnarled branches silhouetted sharply against the sky, upon which the turkey vultures came to perch and preen their feathers. That night the veery — the "wilderness bird" we called him — sang entrancingly long after all other bird-notes were hushed and darkness had settled upon the earth. Out on the lake rang out the wild demoniacal laughter of the loons. It was a wild spot, — remote, lonely.

The next day, as we sat beside our campfire, eating a meal, I noticed a chimney swift fly to a tall stub that stood upon the shore and disappear beneath a projecting twig. Examination disclosed a small hole, into which the bird had apparently entered. Further observation confirmed this conclusion. The birds were using the stub, presumably for breeding purposes. The next day presumption was changed to certainty. After chopping a hole in the base of the stub, my companion crawled in, and worming his way up the hollow interior, found a nest composed of sticks glued together

by the bird's saliva and fastened to the wood by the same material. Within the nest were four callow young, about half grown. This was on July 20. The nest was about fourteen feet from the ground.

So unique a discovery afforded us rare pleasure. Such experiences far more than compensate one for any incidental discomforts of such a trip.

MANLEY B. TOWNSEND.

Nashua, N. H.

BACHMAN'S SPARROW AT CHICAGO.

Bachman's Sparrow (*Peucæa æstivalis bachmani*) is, like the Chewink, Cardinal, Carolina Wren and several others, a species that is gradually from year to year extending its breeding range northward. The largest jump in this extension, if not in fact, at least in record, is to be chronicled from this neighborhood. The exact locality where it turned up here is "Waller's Park," in the northern part of the village of River Forest, which is described more in detail elsewhere in the "Bulletin." Our post office is Oak Park, that better known suburb of Chicago; hence, when speaking to strangers our place of residence is Oak Park, the better known of the two; but to such somewhat familiar with local conditions, we say River Forest. While looking for warblers and other migrants in this charming spot on May 9th last I suddenly heard a loud, melodious song in the southern part of the park, where there are many larger oaks. It seemed new, and yet it struck a responsive chord in the memory. At first I wanted to dismiss it with the thought, as I had done several years previously in Edwards County, southern Illinois, that it was an unusual loud and melodious Field Sparrow or an unusually musical Chewink singing. Then memory seemed to make an unconsciously stronger effort and I said to myself, that is none other than Bachman's Sparrow. Now for the verifying! Glass in hand I sneaked to the place whence the sound came, and I saw that there were about ten individuals of what were undoubtedly a species of sparrow, but unlike any we have here as migrants or summer residents. They acted as though very much at home and enjoying the place; they were mostly on the grass-covered ground, feeding, but as if moved by an irresistible exuberance of spirit they would in turn, first one, then another, mount up into the lowest branches of the trees and sing their song, then descend again. Nor did they seem wary or afraid, and this gave me an opportunity to watch them at close quarters. They were a chubby sort of a finch, of about the size of the Song Sparrow, with decided reddish brown upper parts and a suffusion of yellowish or buff on the unstreaked underparts. Bill and feet were also pinkish,

if memory serves me right, thus completing the picture of a larger and chubbier and louder edition of the Field Sparrow. There was no mistaking, the incidents and scenes of my first meeting with them four years previously near Browns, Illinois, were too indelibly impressed in the memory. A look at several skins of this species in my collection, when I had come home, added an unnecessary confirmation to the identification.

Thinking that this little batch of *Peucæa* had by the ardor and excitement of migration been carried further north than they had intended, in the companionship of White-throats and others, and would retrace their way south again for a hundred miles or so, to the latitude which, according to latest reports, formed the northern limits of their breeding range in this state, I did not visit the spot the next day. Therefore I was much surprised when on happening that way again on the 12th of May, I found them still in the same place. Later, they seem to have scattered in pairs, two or three of which at least remained in the park, where they had been first seen, as I got glimpses of what seemed to be one of them several times later in May and in June. During the last days of the latter month, two or three were heard singing lustily in a rather open grove across the street from my house, and here, to make the record indisputable, I took one on July 1st. It proved a male, the sexual organs of which showed breeding. Thus it seems that this more or less Carolinian species must now be counted a member of the avifauna of the Chicago area.

G. EIFRIG.

River Forest, Ill.

SONG SPARROW, THRUSH, AND OWL NOTES.

While on a collecting trip in Virginia, during the middle of July of this year, Mrs. Shufeldt captured a young Song Sparrow (*Melospiza m. melodia*), which apparently had very recently left the nest. I placed it in a comfortable cage until such a time as I could arrange to photograph it. This came about in a few days, during which period the bird fed readily on hard-boiled egg, bread, and water, and a few meal worms. It was remarkable how rapidly it developed and grew, and still more surprising how fond it became of meal worms.

An interesting point appeared with respect to its plumage; for, while this was apparently entirely normal, the *proximal third* of all the tail feathers came out pure white, and that portion of the tail is that way at the present writing. The bird appears almost like another species; and if it be a case of partial albinism, it is a very

remarkable form of it. It is hardly possible that it has been caused by fright, incident to its capture, cases of which I have personally seen in men and women, — that is, where the hair, or certain locks of it, has turned white in a few hours from fright or great anxiety.

After this bird had assumed its full summer first plumage, I determined to restore it to freedom, letting it out in a room where the windows were all open. It flew out and lit on one of the shutters. Upon shaking the bottle at it, in which I kept a supply of meal worms, it immediately flew back into the room, lit on my hand, and tried to coax me into giving it a worm. After this the bird became such a pet and so interesting that I have decided to keep it all winter, to note what plumage its tail will take on in the spring. It eats heartily of canary seed, but prefers an insect diet. Its summer notes during the day are charming, and I love to listen to them while at my work. During warm days it takes a bath three or four times between sunrise and dark.

My attention has recently been called to a case of *double-nesting*, the birds being the European Thrush (*Turdus musicus*). The two pairs built their nests side by side, in close contact but not interwoven. The site was in a tree in a copse at Codicote, England, and the photograph shows a clutch of eggs in each nest. It was taken by Mr. G. J. Buller, of the Letchworth Museum, in which institution the specimen is now exhibited. I am interested to know whether any one has ever observed such a "double-nesting" having been resorted to by any of our United States thrushes, as the Wood Thrush, or any others of the genus *Hylocichla*.

Recently, I have been collecting material with the view of publishing some articles, aimed to demonstrate to American agriculturists the usefulness of our Owls. One or two of these articles have already been accepted, and will appear in due course. Mr. John Henry Gurney, a Corresponding Fellow of the Union, writes me that they have been trying for years to impress the fact upon the minds of the gamekeepers in England of the value of Owls; but that they, as a rule, still persist in killing those birds as "vermin." Recently they have been issuing there special slips, printed in very bold type on a fine grade of paper, for distribution among the gamekeepers and farmers, but especially among the former. Copies of one of these slips are now before me. A line of big type, "The Utility of Owls," invites attention to a striking instance given below it, which says: "Taken out of a Barn Owl's Tree at Keswick in Norfolk (April 10, 1911) 114 'Pellets' containing the skulls of:—19 very small rats, 126 Long- and Short-tailed Field-mice, 69 Shrew-mice, and 3 small birds (perhaps Green finches). No Game."

Mr. Gurney writes me (Aug. 3, 1915): "The old tree, which was an oak, blew down; it was quite hollow, and some of the pellets were in fragments, which had the appearance of being many months old. They were all soaked in water, and the skulls carefully laid out in rows and counted."

From the viewpoint of practical, economic ornithology, it would seem that the issuance of such slips by the U. S. Department of Agriculture to the more intelligent class of farmers and general agriculturists, all over the country, would be of immense service in this direction, and doubtless accomplish much good in sparing our smaller and medium-sized species of Owls, — birds which, in fact, belong to the most useful class, in so far as the interests of agriculture are concerned.

R. W. SHUFELDT.

Washington, D. C.

FIELD NOTES FROM THE CHICAGO AREA.

My observations during last spring's imigration — limited though they are, owing to preoccupation — confirm Prof. Lynds Jones' remark respecting the correlation between bird migration and the weather. While the last winter was notable here for the continued cold weather, with snow on the ground for a longer uninterrupted period than usually, the second half of February brought us milder and sunnier weather than in other years. As if unable to resist the lure of such fine days the Bluebirds appeared on the 18th, when two were seen, whereas in other years they only appear between the 10th and 15th of March. On the 20th five were seen, which were warbling and enjoying themselves in a way that almost led one to believe that spring was here in earnest and not only up to one of its not too infrequent deceptions. The Robin appeared on the scene on the 21st, to disappear again with the Bluebirds on the 23d, when a cold wave came. The other members of the batch of first arrivals here did not seem to be influenced by the warm days, as the first Meadowlark was heard on the 11th of March and the first Killdeer on the 13th, and owing to the situation and location of my home I can see and hear the first of these without fail. The other members of what I would call the first migrant-association to arrive here are the Junco, Song Sparrow, Redwing, Grackle and Cowbird. The 13th of March seems to have been an auspicious day for birds this year, for while passing through Waller's Park, coming from Thatcher's Woods, where I had seen a Cardinal, I saw 30 to 50 Bluebirds, about the same number of Robins and Tree Sparrows, all singing as loud as they could, and heard a Song Sparrow.

On the 29th of March, when it was cold enough the night before to freeze over a bay in the Fox River, I saw a Coot stalking among the alders at the river's edge. On April 17th we flushed five Prairie Chickens in one of the brushy *woods* which cover some of the hills of glacial drift along the Fox River near Cary, Ill. On April 26th the martial music of the first Bobolinks was heard, four days earlier than is customary here.

On the first of May I rediscovered in the Addison woods, the scene of many former rambles, the colony of Night Herons, which I had given up as lost. They had now located a short distance north of their old home, in a growth of small oaks, the twenty odd nests being no higher up than 15 to 20 feet. There were no eggs in the nests yet, and some more nests seemed to be building. If proof were necessary for the statement that Chimney Swifts migrate in day-time, that day brought it conclusively to me. When I left the house in the morning, and even at noon, there were no Swifts about; when we returned at five o'clock there were three to four sailing around overhead. The Lapland Longspurs were in the fields in their usual abundance. Their apparent predilection for Addison is difficult of explanation.

Since early in April there was a flock of about 25 Cowbirds on the campus of the school and on the lawns. Forming a rather formidible flock with English Sparrows they would rise from and settle down on the ground together, no doubt doing much good in eating weed seeds and such insects as were to be found. But the depredations of the Cowbirds showed up with the first nest found This was one of a Meadowlark on the 5th of May, which held three eggs of the rightful owner and two of the parasite. Another egg of the Meadowlark was found just outside of the nest, another a foot away, in the bird's way of approach. Query: Did the Meadowlark *feel* her complement of eggs to be complete, or did the Cowbird maneuver the eggs out, or did she cajole *Sturnella* by other means into laying outside of the nest? I think the first solution is probably the correct one.

The principal find of the season for us, that of Bachman's Sparrow, on May 9th, I have recorded more in detail elsewhere. On the 15th of the month I saw a pair of Lark Sparrows at Cary; this species must be classed as rare in this territory. It may be added that the Dickcissel is notable this year only by its absence. I have not seen a single specimen in places where they were last year. He is apparently striving to keep up his reputation for eccentricity. On the other hand the Goldfinch, Flicker and Redhead seem to be increasing in numbers from year to year. The Robin has been more plentiful than I have seen it during the six years of my resi-

dence in Illinois. I thought that abundance of earth worms, owing to the unusually rainy summer we had, had something to do with it. But, alas for theories! At Arlington Heights, about a dozen miles away, they have been so rare this summer that competent observers say, they did not see one in five or six weeks.

At Cary our camp is within a few yards of the edge of a marsh. Here one can easily make notes on the voices of the marsh heard at night. Beside the clucking and cackling of coots, gallinules and rails the Prairie Marsh Wren (*Telmatodytes palustris iliaca*) sings spasmodically at least till one o'clock. The Warbling Vireo nesting nearby also puts in a few notes from time to time, as if talking in his dreams.

On July 3d, a Bob-white came in the open spaces near my home and called out loudly, the only one I have seen or heard here this year. Too bad that this fine bird is becoming so rare! Also one only is the sum total of Ruffed Grouse seen by me. This was at Miller, Ind., in the sand dune region, where the abundance of wild fruit and underbrush and absence of the *genus homo* furnish this fine primeval denizen of our woods a chance to subsist.

G. EIFRIG.

River Forest, Ill.

Announcement

As I find it necessary to move my belongings to another locality, I'm endeavoring to make the task as light as possible. If any colleges, museums or individuals would be interested in acquiring certain specimens, I might arrange things to the mutual advantage of all parties concerned.

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